

## Geological Setting

The Canal Road corridor is located in the Piedmont Province and the subprovince of the Coastal Plain. The Piedmont Province is characterized by metamorphic rocks. In the Coastal Plain, these rocks are covered by sand and gravel deposits ranging in age from Cretaceous to Recent. The Fall Zone, which separates these geologic divisions, bisects the area diagonally from northeast to southwest and includes the heights of the Potomac Palisades and the waterfalls in the Potomac River at Little Falls.

The Coastal Plain is further divided into terranes, the most eastern of which is the Potomac terrane, which includes the Canal Road Byway corridor. The Potomac River has cut a gorge through the complexly deformed metamorphic rocks of the Potomac terrane.

Within the Canal Road corridor, the canal and towpath occupy an incised channel on a bedrock terrace of the Potomac River. A series of terraces created by the river over millions of years contribute to the land form.

No fossils are known to occur within the rocks of the Potomac terranes, including the Canal Road corridor. These rocks were either deposited prior to the development of shelled organisms or any fossils present have been destroyed through geologic processes.

The floodplain of the Potomac River within the Coastal Plain is relatively broad. However, when the Potomac floods its banks, the results can be devastating to man-made features. A flood in 1889 destroyed the “outlet incline” - an ingenious piece of early engineering that transferred loaded barges down a 30 degree paved incline to the Potomac River in order to avoid waiting in line with other boats to pass through the locks in Georgetown. Floods helped put an end to the canal in 1924. The floods of 1996 caused damages totaling \$65 million to more than 800 structures throughout the park.

The year after he settled the Jamestown colony in Virginia, Captain John Smith sailed up the Potomac River in 1608 and may have explored as far as Little Falls, north of the present-day District of Columbia. Smith found abundant fish and game and Native Americans living in the area. Captain Henry Fleete sailed up the Potomac in 1632 and anchored at a place the Piscataway Indians called Tahoga. In 1790, Congress authorized a site on the Potomac for the new capital city of the United States, leaving to President George Washington, a major landowner in the area, the selection of the specific location. With the aid of several commissioners, Washington chose the 10-mile-square site where the plans for the new federal city were developed by Pierre Charles L'Enfant, a Frenchman who had served on Washington's staff during the Revolutionary War. (H,N,R)

## Chain Bridge Segment

**3 Chain Bridge** - Today's Chain Bridge is the eighth in a series that have spanned the Potomac River at this site since the first, a covered wooden structure, was built in 1797. The name Chain Bridge comes from the third bridge built here, one of the world's earliest rare chain suspension structures. (H)

**4 Palisades Park and Battery Kemble Park** - Although only about one mile long, Potomac Palisades Park/Battery Kemble Park contains a lush and diverse deciduous woodland enveloping a rocky streambed. This small parkland is bordered by Chain Bridge Road, 49th Street, and Nebraska Avenue. Most of the park area is above MacArthur Boulevard, but it can be reached from Canal Road. The second growth forest species include tulip trees, black locust, dogwood, sycamore, oak, hickory, maple, beech. A variety of birds can be seen here, including veeries, which stop here on their spring and fall migrations.

**5 D. & W.H. Smith Lock Mill/Edes Mill** - An 1887 “Official Records and Actual Surveys” map indicates that the D. & W. H. Smith Lock Mill was located south of Canal Road between intersection of Arizona Ave and Reservoir Road. According to an architectural survey of the B&O Railroad, Georgetown Subdivision 1987, the area between the C&O Canal and the Potomac River to Maryland included the Edes Mill Industrial Complex. An Y-shaped interchange was built to provide access from the Lock Mill to the Abner Cloud House, the Old Locks, and the fisheries located nearby. (A)

**6 Abner Cloud House** - Constructed about 1801, this building is the oldest house along the C&O Canal. It was restored during the Bicentennial of the United States by the Society of Colonial Dames, Chapter 3, in a partnership with the National Park Service. It is open periodically. (H)

# 3 Intrinsic Qualities Resources of Significance

**7 Fletcher's Boat House** - Natural resources here include the Potomac River, the floodplain along the river, and the natural beauty along the C&O Canal and towpath. There are many box elder (ashleaf maple), black locust, and sycamore trees in the floodplain of the Potomac. The black locust trees are in the legume family and produce fragrant, pendulous clusters of pretty, white, pea-like flowers in spring. Among the sycamores, there are some - such as the one on the driveway down to the boat dock - that are remarkably big. Near the Abner Cloud House, there are several small trees or shrubs including a mock orange, which has a fragrant, white flower, and a crepe myrtle, which produces reddish blossoms in summer. Near Fletcher's is a spillway from the canal to the river, which is easily viewed from above along the Capital Crescent Trail. Water escaping through the wooden gates cascades over cement slabs into a streambed below. (N, R,S)

**8 Glover Archbold Park** - This 183-acre, NPS-administered park is a dense, thriving forest. Some of the oak, sycamore, beech and other trees are 150 to 200 years old. The land was donated to the city in the early part of the 20th century by philanthropist Charles Carroll Glover and Anne Archbold, a Riggs Bank executive and Standard Oil of New Jersey heiress. For a while, it was operated as a bird sanctuary. The beech trees even when large retain smooth bark, and they produce edible beechnuts, which are eaten by squirrels, raccoons, and some species of birds. (N,R)

**9 Ruins of Inclined Plane** - Located between the canal and the Potomac River about a mile west of Georgetown, this ingenious piece of early engineering was like a dry dock on wheels. Canal boats entered into a wooden trough, the water was drained, and the boat and trough slid down a paved incline (about a 30-degree angle) to the river. By using the incline, boatmen avoided waiting in line with other canal boats to go through the series of locks

in Georgetown. The incline was destroyed in a major flood in 1889; however, the outline of its receiving basin on the Potomac shoreline can still be seen during the winter months when foliage does not impede the view. (A)

**10 Washington & Great Falls Electric Railway Bed Ruins** - Near the intersection of Canal Road and Foxhall Road are remnants of the Washington & Great Falls Electric Railway bed, which extends across Glover-Archbold Park, in the form of a large trestle. The Washington & Great Falls Line ran along the Canal from Georgetown to Cabin John. The line was intended to go past Glen Echo to Great Falls, but this was never accomplished. From 1896 to January 1960, railcars ran on the line along the high bluffs of the Palisades, providing patrons with panoramic views of the canal and the Potomac River. (A)

**11 Georgetown University** - Located on the bluff high above Canal Road and the C&O Canal National Historic Park, 37th and O Streets, is Georgetown University, with the spires of its Healy Building clearly visible from the surrounding area. Founded in 1789 by John Carroll, the first American bishop, Georgetown University it is the oldest Catholic university in the United States. As a nationally acclaimed institution of higher learning, Georgetown University hosts a variety of cultural events. Departments such as the Art, Music, and Theatre Department, Office of International Programs, and the Women's Center host numerous events each month, many of which are open to the public. (H,C)

**12 Exorcist Steps** - This long flight of steep stairs at 36th Street between Prospect and M Streets was featured in the movie “The Exorcist.” (C)

## Vegetation

From Foxhall Road to the Maryland state line, the intermittent tree canopy and densely vegetated road-sides contribute greatly to making the corridor a scenic byway. In the middle section of Canal Road, while views of the canal itself are blocked by the restored stone wall along the roadway, the location of the canal is still evident as a noticeable gap in the vegetation between the narrow strip of trees and shrubs adjacent to the wall and the larger, denser forest in the middle distance, on the other side of the towpath.

Along Canal Road the tallest trees provide an intermittent, partial canopy over the roadway along sections of the roadway. Trees and shrubs form a curtain of green vegetation, particularly on the north side and on the western end. The vegetation is a mixture of natural native and non-native species. In forested areas, the predominant hardwood trees are box elder (also called ashleaf maple), white and black oak, American and slippery elm, sycamore, black locust, ash, tulip poplar, and hickory; other species include sumac, mulberry, mock orange, spice bush, witch hazel, catalpa, tree-of-heaven, and paw-paw. Flowering trees, shrubs, and plants - such as the royal paulownia (or “empress tree”), with its blue flowers in spring, or the trumpet creeper, with its showy orange flowers in summer, or the sumac, which turns red in the fall - add seasonal beauty.

Many of these trees and shrubs historically had commercial or domestic uses. The white oak was formerly used in barrel-making and shipbuilding. The hickories produce nuts that were prized by Indians and pioneers, as well as a strong wood for furniture, tool handles, and furniture. The fragrant, edible inner bark of the slippery elm was formerly used as a cough medicine or poultice. In riparian areas, the box elder is commonly found with willows, maples, and other water-loving and -tolerant plants; it produces a sweet sap like the sugar maple. The paw-paw, the northernmost member of a chiefly tropical family, produces an edible fruit eaten by wildlife.

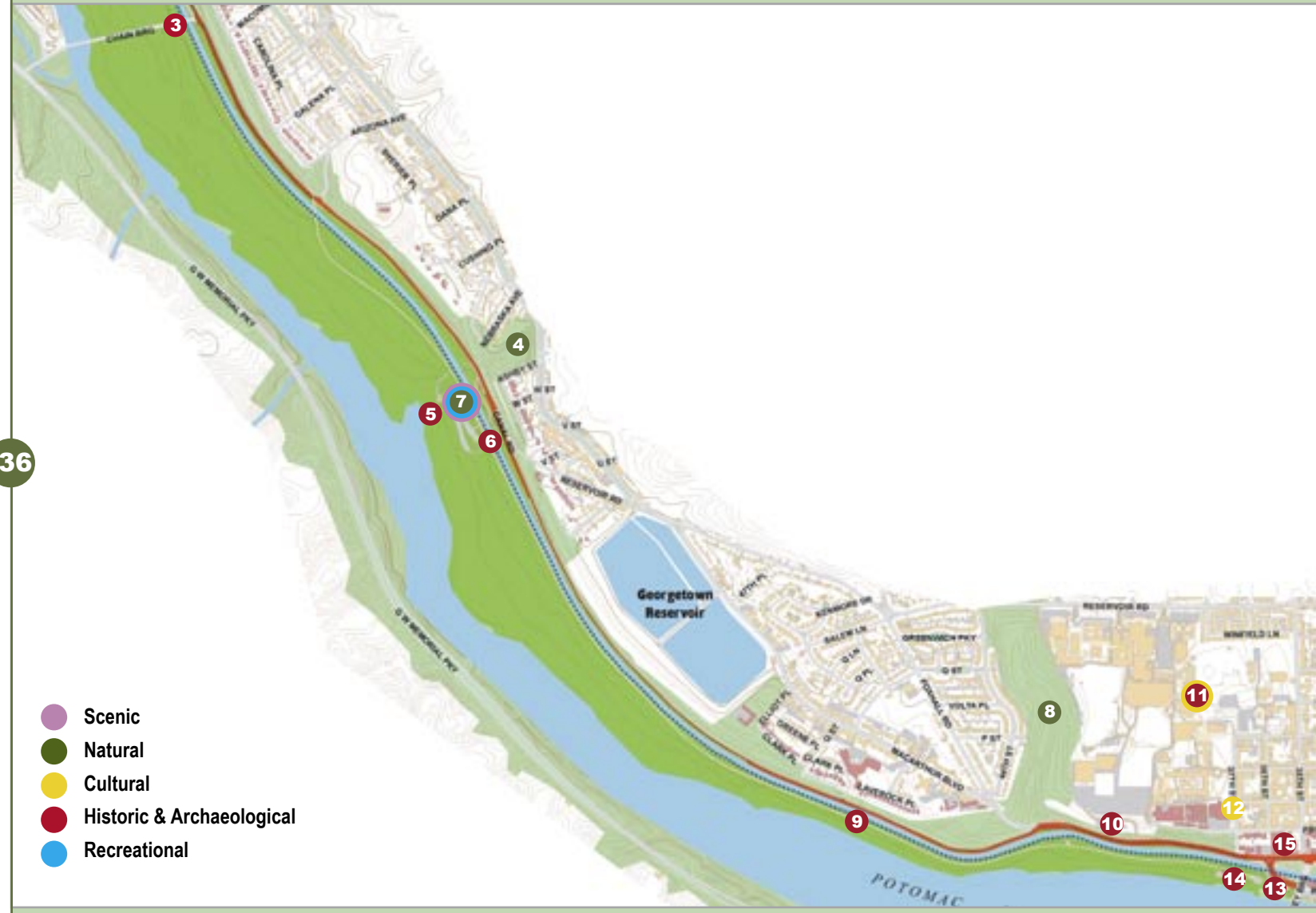


Fig. 3-8 **RESOURCES LOCATED IN CHAIN BRIDGE SEGMENT**

### 3 Intrinsic Qualities Resources of Significance

**13 Aqueduct Bridge Remains** - Just west of Key Bridge are the remains of an old abutment and pier, vestiges of the Aqueduct Bridge built between 1833 and 1843 to carry the C&O Canal across the Potomac River to connect with the Alexandria Canal on the Virginia side. A major 19th century engineering achievement, the finished trough was 1,456 feet long and approximately 40 feet above the river. The trough was drained of water and used as a bridge during the Civil War; after the war, a roadway was built above the boat channel to facilitate foot and vehicular traffic between the two sides of the river. Congress authorized replacement of the bridge in 1916, resulting in today's Francis Scott Key Bridge. From the canal towpath, the bases of two Aqueduct Bridge piers may be seen near the Virginia shoreline of the river. A stairway near the abutment leads to K Street beneath Whitehurst Freeway and the Georgetown Branch Trail. (A)

**14 Washington Canoe Club** - This private boathouse at 3700 K Street NW is located adjacent to the canal and the Georgetown Branch Trail. The structure was built around 1890 in what is known as the shingle style. Most of the ground floor houses canoes, while the second floor provides space for club activities. (H, R)

**15 Former Car Barns** - Located at the northwestern end of Francis Scott Key Bridge, this imposing building with its central clock tower was built into the rocky hillside between M and Prospect Streets NW between 1895 and 1897 as a station and trolley car storage facility. The address is 3600 M Street NW. Now, over 100 years later it has new uses which include offices and a top floor available for catered events. There are excellent views of the river and the surrounding area from the top-floor vantage point. (H)

#### Georgetown Segment

**16 Francis Scott Key Bridge** - Key Bridge was authorized by Congress in 1916 to replace the old Aqueduct Bridge spanning the Potomac to Arlington, Virginia. Completed in January 1923, it is an early example of a reinforced concrete structure. The 1,791-foot bridge has five great segmental arches that gracefully step across the river. Sidewalks on both sides of the bridge provide excellent views of the Three Sister Islands, riverside vegetation, the Palisades, and Georgetown University upstream, and the Georgetown waterfront, Roosevelt Island, the John F. Kennedy Center for the Performing Arts, and part of the city's monumental core downstream. (H,S)

**17 Francis Scott Key Memorial Park** - This attractive park, perched on the northern side of the Francis Scott Key Bridge, honors the author of "The Star Spangled Banner" and provides an attractive entry point to the Georgetown community from the bridge or Canal Road. Key, the author of "The Star-Spangled Banner," lived in a house at the M Street end of the bridge. The stars in the park's flag are the same number as the states in the Union in 1814, when Francis Scott Key composed the verses that later became our national anthem. A bust of Key and several plaques outlining the history of the area are in the park. The park offers a shady, beautifully landscaped place to view the Potomac River and watch passers-by entering Georgetown. A wisteria-covered arbor and bust of Key make up the centerpiece. Landscaping includes ornamental trees, shrubs, flowers, ornamental grasses, and groundcovers, such as cotoneaster. Among the trees is the Chinese scholartree (also called a Japanese pagoda tree), which is a hardy, though slow-growing street tree with late summer blossoms. There are also larger, native trees nearer the bridge. (H,N, S)

#### Wildlife

Habitat types in this area cover an interesting range, particularly when considered on a transect: the open water of the Potomac River, riparian areas along the river, the floodplain woodland, and the upland hardwood forest. With this variety of habitats, the Canal Road area is one of the richest areas in the city for wildlife. Mammals in the area include white-tailed deer, red fox, gray squirrel, opossum, rabbit, raccoon, and mice.

A wide variety of birds are found within the various habitats of the Canal Road corridor. Audobon Society annual, mid-winter surveys in this area have typically counted between 80 and 90 species. Birds that can be seen within the Canal Road corridor include raptors, such as golden eagles, hawks, owls, and osprey, grouse, turkey, woodpeckers, two species of chickadee, bluebirds, robin, cardinal, sparrow, marsh birds such as herons and egrets, ducks, geese, and other water birds, migrating warblers and thrushes, ducks, and gulls.



Francis Scott Key Memorial Park





Fig. 3-9 RESOURCES LOCATED IN GEORGETOWN SEGMENT

- Scenic
- Natural
- Cultural
- Historic & Archaeological
- Recreational

**18 Theodore Roosevelt Island** - What now appears to be mostly undisturbed woodland was, in the eighteenth century, part of the estate and farm of John Mason, son of the Virginia patriot, George Mason. The island changed ownership several times before the Roosevelt Memorial Association purchased it in the 1930s. A landscaping plan, designed by the Olmsted Brothers, the sons of Frederick Law Olmsted, called for the removal of man-made structures and the planting of thousands of trees and shrubs. Trees growing on the island include chinkapin and red oaks, maples, elms, ashes, and tulip poplars; shrubs include pawpaws and spice-bush. (N,R)

**19 M Street** - As Washington, DC developed, Georgetown's business and social affairs shifted from the waterfront to Bridge Street (now M Street), which became the major avenue of approach to the new capital from the west. Today M Street is a major shopping and entertainment district, with numerous stores, boutiques, restaurants, and bars catering to locals and visitors alike. (C,S)

**20 Georgetown Historic District** - Georgetown was already about 50 years old when the capital of the United States moved from Philadelphia, Pennsylvania to the banks of the Potomac in 1800. Founded in 1751 around a ferry landing and a tobacco inspection warehouse, it was a thriving port by the time it became a part of the new 10-mile-square federal district. Wharves extended into the river, and warehouses and taverns were all located nearby. By the end of the 18th century, the governor of Maryland claimed that Georgetown was the largest tobacco port in the United States. With waterpower from the Potomac River and Rock Creek, milling also developed as a prominent industry, strengthened further when the town became a shipping terminus for the Chesapeake & Ohio Canal. In 1895, Georgetown was fully integrated into the City of Washington when its street names

### 3 Intrinsic Qualities Resources of Significance

were changed to conform to those of Washington streets. The Georgetown Historic District was created in 1950 by an Act of Congress. The district, which includes the waterfront area, is a remarkably intact example of a complete historic town, containing some 4,000 structures, the oldest of which dates from about 1766. It was placed on the National Register of Historic Places in 1967. (H)

**21 Forrest-Marbury House/Ukrainian Embassy** - The west portion of this house was constructed by Uriah Forrest about 1785. In 1791, President George Washington met here with Georgetown landowners to get their support for the proposed new capital city. A subsequent owner, William Marbury, was a litigant in the U.S. Supreme Court case Marbury v. Madison, which established the principle of judicial review. Today, this former residence, located at 3350 M Street NW, and the building adjoining it on the southeast corner of M and 34th Streets NW are home to the Embassy of the Ukraine. It was placed on the National Register of Historic Places in 1973. (H,C)

**22 Former Georgetown Market** - The large brick building at 3276 M Street NW was constructed in 1865, but it stands on a site used as a Georgetown market since 1795. The building has served many commercial uses during its long history, including an automotive parts distributorship store in the mid-20th century. Its restoration and reuse as a upscale food and wine emporium, Dean & Deluca, connects it once again with its historical roots. (H)

**23 Canal Warehouses** - Built in the early part of the 19th century, these warehouses, located on the south side of the C&O Canal between the Powerhouse and the Wisconsin Avenue canal bridge, provided storage space for goods and materials shipped down the canal to Georgetown. Today, these large brick buildings

have been turned into new uses, such as commercial businesses, office space, and condominiums. (H)

**24 Prehistoric and Historic Artifacts at Georgetown Park** - In 1985, an archaeological testing program identified early 19th century building walls and brick flooring, 18th century cobblestone paving, which indicated waterfront activity, and a prehistoric component of stone tools and lithic debitage. In 1998, Congress appropriated funds to create a waterfront park under the freeway and to display archaeological assets of the site. (A)

**25 Washington Harbor** - Situated on the river side of K Street NW at the foot of Thomas Jefferson Street NW, this commercial, office, and residential complex was completed in 1986. Although its whimsical design has been compared to the towers of Kubli Khan, it is one of the few waterfront buildings in the city that consciously ties its land use to the river. It is a popular place for dining, and during the spring, summer, and fall months, boardwalk strollers see boats from all over the East Coast tied up at the docks.

**26 Embassy of Mongolia** - This diplomatic presence was established at 2833 M Street, NW after the collapse of the Soviet Union in the early 1990s. (C)

**27 Old Stone House** - Built about 1765, the Old Stone House, located at 3051 M Street NW in Georgetown, is the oldest standing building - and the only surviving pre-Revolutionary War structure - in the District of Columbia. The exterior is constructed of locally quarried blue granite. It was built by Christopher Layman, a cabinetmaker, and it served as his home and shop. Representative of pre-Revolutionary War vernacular architecture, the house has been restored and furnished to reflect that period. The historic site is administered by the National Park Service. (H)



Old Stone House



Car Barns



M Street





Fig. 3-9 **THREATS AND DETRACTORS**

### 3 Intrinsic Qualities Threats and Detractors

Five major categories of issues detract from the intrinsic qualities of the Canal Road Scenic Byway: lack of roadway safety; poor accessibility and connections to resources; lack of visibility and aesthetics; natural resource impacts; and lack of awareness of interpretive opportunities.

**Roadway Congestion & Safety** - One of the biggest detractors along the Byway is the traffic. While the Clara Barton Parkway, Canal Road, and M Street are not unsafe roadways by design, high speed, high-volume traffic - particularly during rush hours - can create unsafe situations. Lane restrictions between Chain Bridge and Arizona Avenue, which are necessary because of high traffic volumes during peak hours, inhibit smooth circulation and require extra care by commuters and visitors. The high speed, one-way rush-hour traffic from Chain Bridge to Foxhall Road can be problematic for byway users. Several informal pull-off areas have been created by work crews and others; use of these pull-offs creates dangerous traffic conditions. At the intersection of Canal and Foxhall Roads, the cross-over design and poor signal timing adds to congestion. Signage for the Key Bridge intersection is confusing and causes poor traffic flow. Outside of Georgetown, there are few locations where pedestrians may safely cross the roadway. Likewise, personal safety has been a concern in the pedestrian/bicycle tunnel beneath Canal Road near Foxhall Road.

**Poor Accessibility & Connections to Resources** - Canal Road has poor accessibility and connections to resources along its length. At Arizona Avenue, there is no connection from the towpath to the bridge to the Palisades community. The intersection at Fletcher's Boat House is configured so that it is virtually impossible to access Fletcher's from the west, which inhibits use of the natural, historic, and recreational opportunities. Also, vehicle and pedestrian access to resources at the C&O Canal National Historic Park is impacted by poor lighting and maintenance of the tunnel at Glover-Archbold and Battery Kemble Parks.

**Natural Resource Impacts** - Trees and herbaceous vegetation suffer the stress of living in an urban environment: physical breakage, soil erosion, too much or too little water, and air pollution. Exotic species, such as English ivy and honeysuckle, may grow so thick that they choke native trees and shrubs. The invasive tree-of-heaven grows along Canal Road; this species' male flowers and crushed foliage have a disagreeable odor, some people are allergic to the pollen, and the roots are poisonous. Water quality in the Potomac River and Rock Creek is degraded by non-point pollution, loss of riparian vegetation, and runoff, which creates health concerns for water sports and fish consumption.

**Aesthetics & Visibility** - The bright, institutional Cobra street lighting near Fletcher's Boat House detracts from Canal Road's park-like appearance. The high retaining wall from Key Bridge to Foxhall Road and overgrown vegetation interrupts views of the Canal and the Potomac River. The deteriorating cap spalling and exposed rebar of the canal wall in front of Georgetown University detract from the area's aesthetics. Where stream beds are routes for city sanitary sewer lines, there is noticeable sewer-pipe odor. Along M Street in Georgetown, the street trees are generally small and sparse. This barren landscaping and overabundance of on-street parking, detracts from the historic character of the area.

**Lack of Awareness of Interpretive Potential** - The lack of entry signage at the Maryland State line contributes to an overall lack of awareness about Canal Road and its resources. Near Fletcher's Boat House, archaeological excavations have uncovered thousands of artifacts; however, these resources have not been interpreted. Furthermore, the Native American history and the Colonial milling history are buried in old documents and maps instead of presented with the C & O Canal interpretation efforts. The lack of interpretation of these important resources ultimately hurts efforts to preserve the area's history.

#### Summary of Issues

##### Roadway Congestion and Safety

##### Natural Resource Impacts

##### Poor Accessibility and Connections to Resources

##### Aesthetics and Visibility

##### Lack of Awareness of Interpretive Potential



Deteriorating cap spalling detracts from the area's aesthetics

